Work Order ID 106984 \*106984\* Page 1 September-12-13 12:36:49 PM Accept \*N900040100\* Setup Start Item ID: D4131-041 **Revision ID: Item Name:** Manifold Assy Start Qty: 5.00 9/12/13 **Start Date: Cust Item ID:** Req'd Qty: 5.00 Required Date: 9/26/13 **Customer:** Reference: Run Process Plan: MLJ Date: 13-09-1 ZTooling: Date: Approvals: Stop Date: SPC (Y/N): Date: Set Up/ Tool ID Tool # Plan Accept Reject Reject Insp. Operation Sequence ID/ Description Run Hours Code Qty Number Stamp Work Center ID Qty **Draw Nbr Revision Nbr** D4131 В Weld per dwg A/R S.S. rod Batch: M 125059 100 EZ 13-9-B \*100\* Large Fab 0.00 Memo Large Fab QC9- Inspect visual per QSI004- Fusion Welds 0.00 110 \*110\* 0.00 Memo Quality Control 120 QC5- Inspect part completeness to step on W/O 0.00  $\varphi_{\mathsf{X}}$ 

0.00

Memo

**Quality Control** 

											DQA:	Dat	e:	
NCR: Ye	es / No				WORK ORDER NON-C	OI	NFORM	MANCE / UP	DATE		•	· · · · · · · · · · · · · · · · · · ·	•	
								·		_	QA Closed:	Dat	e:	
Work Order	<b></b>				DISPOSITION				AGAINST D	EΙ	PARTMENT	/PROCESS		
Work Order	•				Rework	1		Skid-tube	Crosstube	٦	1	Water Jet	$\neg$	Engineering
Part No	<b>o</b> .				Scrap		1	Machining	Small Fab	┨	Pro	d. Eng. Coor.	$\dashv$	Quality
					Use-as-is		Therm	noforming	Finishing	٦	Rec/Stor	re/Packaging		Other
NCR No	o				Work Order Update			Large Fab	Composite			Supplier		
	1	ı	1			1				—	c: o		_	^
Root				1	ption of work order update	1	Initial		ction	١	Sign &			
Cause	Date	Step	Qty		or Non-conformance	Ch	nief Eng	Desc	cription	_	Date	Verification	$\sqcup$	QC Inspector
Doc/Data														
quip/Tooling														·
Operator														
Material							:							
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Other		İ								-				
rocess										-				
Supplier														
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Unapproved				<u> </u>						╝			$\_$	
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Landing	g Gear				General		_		_		-	-		•
	Bending				Bend		Grain			╝	Ovalized			Pressure/Forced
	Centre No	ot Concei	ntric to	o/s	BOM/Route		Hardwa	re			Over/Under	tolerance	$\Box$	Temperature/Cure
s (90)	Cracks				Broken/Damaged		Inspecti	on Incomplete			Part Incorred	ct [		Weld
. [	Crushed/	Crimped			Burrs		Instruct	ions Incomplete/	/Unclear	$\_$	Part Lost/Mi	ssing		Wrong Stock Pulled
	Cuffs				Contamination		Mainte	nance			Part Moved			
	Heat Trea	at į			Countersink		Mislabe	led			Positioned V	Vrong _		
	Inspectio	n Strip in	Tube	Γ_	Cut Too Short		Misread	I	Γ		Power Loss/	Surge [		Other

Offset

Out of Calibration
Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Torque Waves in Extrusion

Drill Holes

Drawing

Finish Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Wo	rk	Order	ID	106984	•
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\*106984\*

Page 2

September-12-	13 12:36:50	PM			TOO:					1 uge 2				
Item ID: Revision ID:	D4131-041			Accept		*N900	040	100	ገ* ፡	Setup S	tart Stop	*N	S1*	
Item Name:	Manifold As	sy									rop	*N	S2*	
Start Date:	9/12/13	Start Qty: 5.00	*5*			Cust Item I	D:							
Required Date	e: 9/26/13	<b>Req'd Qty:</b> 5.00	*5*			<b>Customer:</b>								
Reference:									_	- ~				
Approvals:	Process Pl	lan:	Date:	Toolin	g:	D:	ate:		1		tart	*N	R1*	
	QC:		Date:	SPC (	Y/ <b>N</b> ):	Da	ate:			2	Stop	*N	R2*	
Sequence ID/ Work Center	ID	Operation Description			Up/ 1 Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty		Reject Number	Insp. Stamp	_
124				0.00					/					/
*174* Small Fab		Memo		0.00					61				J3/1	39
Small Fab		ASSEMBL	E LABEL PLATE AS PER	DWG (D41	31-045)								,	
126		QC5- Inspect part comp	leteness to step on W/O	0.00	DAS 27				Ċ					
*126*				0.00	9-89				6					
QC Quality Control		Memo		0.00	139 KG		·			•				
130		Identify as per dwg & Si	ock Location:	0.00					,	<b>⊘</b> As	•			
*130* Packaging Packaging		Memo	ST <b>098</b>	0.00					_6×	28	, -	13	-09-17	

NCR:	Yes	1	No	
IXCIV.	163	,	110	

## **WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: Date:

NCR: Y	es / NO	•			WORK ORDER NOIS-	CONTOR	WANCE / OF	DAIL	QA Closed:	Dat	e:
Mark Orda	·.				DISPOSITION			AGAINST DE	PARTMENT	/PROCESS	
Nork Order Part No					Rework Scrap		Skid-tube Machining	Crosstube Small Fab	1	Water Jet d. Eng. Coor.	Engineering Quality
NCR N	0	• • • • • • • • • • • • • • • • • • • •			Use-as-is Work Order Update	] Ther	moforming Large Fab	Finishing	Rec/Sto	re/Packaging Supplier	Other
Root				Descri	ption of work order update	Initial	i .	ction	Sign &		
Cause	Date	Step	Qty		or Non-conformance	Chief Eng	Desc	cription	Date	Verification	n QC Inspector
oc/Data											₹
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etup	_										
Other	_										
rocess	_								ŀ		
upplier	_										
raining		1									
Inapproved			<u> </u>			1			<u> </u>	<u></u>	
		<del></del> .				AULT CAT	GORY				
Landin				<u></u>	General	<b>—</b> .			1	г	¬
	Bending			.	Bend	Grain		-	Ovalized	. }	Pressure/Forced
	_	lot Conce	ntric to C	<sup>D/S</sup>  -	BOM/Route	Hardw			Over/Under	<b>†</b>	Temperature/Cure
Ļ	Cracks				Broken/Damaged	<b>—</b>	tion Incomplete	<i>.</i> . $\vdash$	Part Incorre	<b>)</b>	Weld
ļ		/Crimped			Burrs	_	tions Incomplete,	/Unclear	Part Lost/M	issing [	Wrong Stock Pulled
Ĺ	Cuffs	₹-	Â.,	<u>  -                                   </u>	Contamination	<b></b>	enance		Part Moved		
		at .	•	_	Countersink	Mislab			Positioned V		
		on Strip iñ	·Tube	<u> </u>	Cut Too Short	Misrea	d	L_	Power Loss/	Surge [	Other
	Ripples i	n Bend		<u> </u>	Drill Holes	Offset					
		Naves in 8		י 📙	Drawing	$\blacksquare$	Calibration				·-···
Į	Turning	Sequence			Finish	Out of	Sequence				
	Wave/Tv	wist in Tul	be	1	Folio	Outsid	e Dimensions				

Work Order ID	106984
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Quality Control

\*106984\*

Page 3

September-12-13 12:36:50 PM Accept Item ID: D4131-041 \*N900040100\* Setup Start **Revision ID:** Stop Manifold Assy Item Name: Start Qty: 5.00 **Start Date:** 9/12/13 **Cust Item ID:** Required Date: 9/26/13 Req'd Qty: 5.00 **Customer:** Reference: Run Date: Tooling: Approvals: Process Plan: Date: Stop Date: SPC (Y/N): Date: Sequence ID/ Operation Set Up/ Tool ID Tool # Plan Accept Reject Reject Insp. Work Center ID Qty Number Stamp Description **Run Hours** Code 140 QC21- Final Inspection - Work Order Release 0.00 \*140\* QC . 0.00 Memo

			•					•		DQA:	Date	•
NCR: Y	es / No				WORK ORDER NON-C	OI	NFORM	MANCE / UPDATI				.,
										QA Closed:	Date	•
Work Orde	r.				DISPOSITION			A	GAINST DE	PARTMENT	/PROCESS	
Work Orde	··· ———	· · · · · · · · · · · · · · · · · · ·	***************************************	<del></del>	Rework	]		Skid-tube Cro	osstube		Water Jet	Engineering
Part N	lo.				Scrap			<b>—</b>	mall Fab	Pro	d. Eng. Coor.	Quality
					Use-as-is	]	Therm	noforming Fi	inishing	Rec/Stor	e/Packaging	Other
NCR N	lo		· · · · · · · · · · · · · · · · · · ·		Work Order Update	]		Large Fab Cor	mposite		Supplier	
Root				Descri	ption of work order update		Initial	Action		Sign &	1.000.00	
Cause	Date	Step	Qty	C	or Non-conformance	Ch	nief Eng	Description	n	Date	Verification	QC Inspector
Doc/Data												
Equip/Tooling		<b> </b>										
Operator												
Material												
Setup												
Other ·										•		
Process												
Supplier												
Training												
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Landir	ng Gear				General		_			•		
	Bending				Bend	L	Grain			Ovalized		Pressure/Forced
	Centre N	ot Concei	ntric to	O/S	BOM/Route		Hardwa	re		Over/Under	tolerance	Temperature/Ċure
	Cracks				Broken/Damaged		4 '	on Incomplete		Part Incorred	<del></del>	Weld
	Crushed/	'Crimped			Burrs		4	ions Incomplete/Unclea	<b>—</b>	Part Lost/Mi	ssing	Wrong Stock Pulled
	Cuffs				Contamination		Mainte	nance		Part Moved		
	Heat Trea	at			Countersink		Mislabe	led		Positioned V	· · ·	_
	Inspectio	n Strip in	Tube		Cut Too Short		Misread			Power Loss/	Surge	Other
ĺ	Ripples in	n Bend	•		Drill Holes		Offset			_		

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish

Work Order ID: 106984

\*106984\*

Parent Item:

D4131-041

\*D4131-041\*

Parent Item Name: Manifold Assy

**Start Date: 9/12/13** 

Required Date: 9/26/13

Start Qty: 5.00

Required Qty: 5.00

Comments:

IPP Rev:A 10.10.06 new issue DD verf:EC

11.09.26 AS PER REV.B DD verf:EC

IPP Rev:B

tem Name	Replacement Item ID	Mig/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4131-1	W	Manufactured	No			100	Each	6.0000	1	5			
*D4131-1*									**	A	13-	9-12	
				<u>Location</u>		Loc	<u>Otv</u>	Loc Code					
				ST098			6				_		
D4131-3		M C 4 1	No	<	81891	100	6 Each	7.0000	1	5	<del>.</del>		
		Manufactured	NO			100	Eacii	7.0000	**		_		
*D4131-3*										- 12	13-9	-12-	
				<b>Location</b>		Loc	<u>Oty</u>	Loc Code					
				ST098	80735		7 7			6	_		
D4131-5		Manufactured	No		80733	100	/ Each	14.0000	2 -	10	_		
*D4131-5*		Manufactured	110			700	244	,	**	EZ	13-9	-12	
Side Plate													
				Location		Loc	<u>Otv</u>	Loc Code					
				ST098			13	•	_	12	-		
					96201>		13		_	18	-		
•				WA001	80736		1		_		-	/	
04131-9		Manufactured	No		80730	124	Each	36.0000	1	5	01		
*D4131-9*		Managara							**	3	13	/09 /	16
				Location		Loc	<u>Oty</u>	Loc Code			•	,	
•				GA			36				_		
					74267 75067		18 18		-	<b>6</b>	-		

											DQA:	Date	e:	.a. w.
NCR: Y	/es	/ No				WORK ORDER NON-	CO	NFORM	MANCE / UP	DATE				
											QA Closed:	Date	e:	
Work Orde	ar.					DISPOSITION				AGAINST DE	PARTMENT	/PROCESS		
Work Orde	- '					Rework	7	İ	Skid-tube	Crosstube	1	Water Jet	7	Engineering
Part N	lo.					Scrap	1		Machining	Small Fab	Pro	d. Eng. Coor.		Quality
	_					Use-as-is	1	1	noforming	Finishing		re/Packaging	1	Other
NCR N	۱o.					Work Order Update	1	1	Large Fab	Composite		Supplier		
Root						ption of work order update	1	Initial	Act		Sign &			
Cause		Date	Step	Qty	······································	or Non-conformance	Ct	nief Eng	Descr	iption	Date	Verification		QC Inspector
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Equip/Tooling	Ц													
Operator	Ш		1											
Material														
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Process	Ш													
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Unapproved d			<u> </u>								<u> </u>			
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Landi					Г	General	_	٠ .		<u></u>	۱ ،	Г		<i>(</i>
	—-	Bending			_,  -	Bend	-	Grain		<del> </del>	Ovalized			essure/Forced
	-	Centre No	ot Concei	ntric to	<sup>0/S</sup>  -	BOM/Route	$\vdash$	Hardwa			Over/Under	<u>-</u>	_	emperature/Cure
*	ш	Cracks	C		<u> </u>	Broken/Damaged	-	<b>⊣</b> '	ion Incomplete		Part Incorred			eld
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1	1 1	<b>Heat Trea</b>	Ι		ı	Countersink	1	Mislabe	eied .	<b>I</b>	Positioned V	vrong		

Misread

Out of Calibration

Out of Sequence

Outside Dimensions

Offset

Other

Power Loss/Surge

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Inspection Strip in Tube

Torque Waves in Extrusion

Cut Too Short

Drill Holes

Drawing

Finish

## **Picklist Print**

September-12-13 12:36:53 PM

Work Order ID: 106984

D4131-041

Parent Item Name: Manifold Assy

\*106984\*

\*D4131-041\*

**Start Date:** 9/12/13

Required Date: 9/26/13

Page 2

Start Qty: 5.00

Required Qty: 5.00

MS20615-3M3

Parent Item:

Purchased

No

124

Each

1,362.000

\*\*

\*MS20615-3M3\*

RIVET

Location ST312

Loc Oty

1362

124859 1362 Loc Code

September-12-13 12:36:53 PM

**Shop Packet Print** 

Page 2

	V	,	A1
NCR:	Yes	/	No

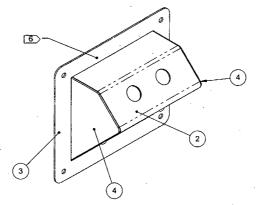
DQA:

Date:

NCR: Ye	s / No				WORK ORDE	R NON-CO	ONFOR	MANCE	- / UP	DATE	QA Closed:	Dat	te:
Nork Order					DISPOSIT	<b>ION</b>				AGAINST DI	PARTMENT,	/PROCESS	
Part No				ra-		Rework Scrap se-as-is Update		Skid-tuk Machinir noformir Large Fa	ng	Crosstube Small Fab Finishing Composite	<b>→</b>	Water Jet d. Eng. Coor. re/Packaging Supplier	Engineering Quality Other
Root			'	Descri	ption of work order	r update	Initial		Ac	tion	Sign &		
Cause	Date	Step	Qty		or Non-conformanc	je i li	Chief Eng		Desc	cription	Date	Verification	n QC Inspector
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upplier	7												
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Inapproved	7						•						
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Landing	Gear		,		General	,							-
٦	Bending				Bend	ſ	Grain				Ovalized	Γ	Pressure/Forced
F	Centre N	ot Concer	ntric to (	o/s	BOM/Route		Hardwa	ire			Over/Under	tolerance	Temperature/Cure
<u> </u>	Cracks			· –	Broken/Damaged	-	<b>⊣</b> .	ion Incom	nplete		Part Incorre		Weld
	Crushed/	Crimped			Burrs	-	<b>⊣</b>	tions Inco	-	/Unclear	Part Lost/Mi	<b>-</b>	Wrong Stock Pulled
+	Cuffs	Cpcc			Contamination			enance			Part Moved		
<b>-</b>	Heat Trea	at			Countersink		Mislabe				Positioned V	Vrong	
	Inspectio		Tube	<u> </u>	Cut Too Short	-	Misread				Power Loss/	r	Other
<u> </u>	Ripples in				Drill Holes	-	Offset			<u>L.</u>		. J- [	1
	Torque V		xtrusio	, F	Drawing	•		Calibratio	n .				
<u> </u>	Turning S				Finish	-		Sequence					
<b>-</b>	Wave/Tw			<b>—</b>	Folio	<u> </u>	<b>-1</b>	Dimensi			<del></del>		

$\Delta$	
/B\	

ITEM	QTY -041	PART NUMBER	DESCRIPTION
1	X	D4131-041	MANIFOLD ASSEMBLY
2	1	D4131-045	BASE ASSEMBLY
3	1	D4131-1	FRONT PLATE
4	2	D4131-5	SIDE PLATE



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UNCON!

SUBJECT:

13-09-12

2011 -09- 2 1

## D4131-041 MANIFOLD ASSEMBLY

	NOTES: 1) MATERIAL: N/A 2) FINISH: N/A 3) TOLERANCES: PER DART QSI 018 UNLESS OT 4) UNITS: INCHES UNLESS OTHERWISE NOTED	HERWISE NOTED
;	4) UNITS: INCHES UNLESS OTHERWISE NOTED 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX 6) IDENTIFICATION: PER QSI 044 6.1 7) WEIGHT: 0.66 lbs	

В	D4131-0 3); ADD	045 WAS D413 Ø0.098 (ZN B	1-3 (ZN D3-1); ADD 4131-045 (ZN B4- 4-7); ADD 4131-9 (ZN B5-10)	RF	11.07.27			
Α	NEW IS	SUE		RF 10.09				
REV.			DESCRIPTION	BY	DATE			
DESIG	٧	RF	DART AEROSPACE	USA	. INC.			
DRAW	٧	RF	KENT, WA		,			
CHECK	ΕD	M	DRAWING NO.		REV. B			
MFG. A	PPR.	$Z_{Z}$	□D4131		SHEET 1 OF 10			
APPRO	VED	N.P.	TITLE		SCALE			
DE APP	PR.	-#	MANIFOLD ASSEMBL	-Υ	NTS			
DATE	11.0	7.27	COPYRIGHT © 2010 BY DART AER THE DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED NOT TO BE USED FOR ANY PURPOSE OR COMPANICA	SS CONDITION THAT IT IS				

NCR: Y	es / No			s	<b>WORK ORDER NON-C</b>	CONFOR	RMANCE / UF	PDATE			,				
							•		QA Closed:	Date:					
Work Orde	<u> </u>				DISPOSITION		AGAINST DEPARTMENT/PROCESS								
Part N		-			Rework Scrap Use-as-is	The	Skid-tube Machining rmoforming	Crosstube Small Fab Finishing	Pro Rec/Sto	Engineering Quality Other					
NCR N	o			. <u>.                                   </u>	Work Order Update		Large Fab	Composite							
Root				Descri	ption of work order update	Initial	A	ction	Sign &						
Cause	Date	Step	Qty		or Non-conformance	Chief En	g Des	cription	Date	Verification	QC Inspector				
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]	Centre N	ot Conce	ntric to	o/s	BOM/Route	Hard			Over/Under		Temperature/Cure				
	Cracks				Broken/Damaged	<b>—</b>	ction Incomplete	<u> </u>	Part Incorre	<del></del>	Weld				
	Crushed/	'Crimped			Burrs	<del></del>	ctions Incomplete	/Unclear	Part Lost/M	_	Wrong Stock Pulled				
	Cuffs			<u>.</u>	Contamination	Main	tenance		Part Moved		•				
	Heat Tre	at			Countersink	Misla	beled	,	Positioned V		•				
	Inspectio	n Strip in	Tube		Cut Too Short	Misre	ad		Power Loss/	'Surge	Other				
	Ripples in	n Bend			Drill Holes	Offse	t								
· [	Torque V	Vaves in I	Extrusio	n 🗌	Drawing	Out o	f Calibration								
	Turning S	Sequence			Finish	Out o	f Sequence								
	Wave/Tv	vist in Tu	be		Folio	Outsi	de Dimensions								

DQA:

Date:

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										ITEM	-043	PART NUMBER	DESCRIPTIO	N	1
1										1	Х	D4131-043	DOUBLER ASSEMBLY		1
										2	1	D4131-7 MS20426AD3-3 MS21069L3	DOUBLER		1
										3	8 4	MS20426AD3-3 MS21069L3	DOUBLER RIVET NUT PLATE		-
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**D4131-043 DOUBLER ASSEMBLY** 



NOTES:
1) MATERIAL: N/A
2) FINISH: N/A
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: PER QSI 044 6.1
7) WEIGHT: 0.07 lbs

7

DESIGN DART AEROSPACE USA, INC. DRAWN RF DRAWING NO. CHECKED REV. B D4131 MFG. APPR. SHEET 2 OF 10 APPROVED TITLE SCALE MANIFOLD ASSEMBLY

COPYRIGHT 0 2010 BY DART AEROSPACE U.SA, INC.
THE DODAMENT BITMATE AND COMPONENT AND SERVICE DOWN DEPORTS ON THE STRINGS OWN DATE OF THE STRINGS OWN DATE OF THE STRINGS OWN DATE OF THE STRINGS OWN DATE OF THE STRINGS OWN DATE OF THE STRINGS OWN DATE OF THE STRINGS OWN DATE OF THE STRINGS OWN DATE OF THE STRINGS OWN TAKENDRUCK U.S. BY DE APPR. NTS DATE 11.07.27

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1

NCR: Y	es / No				WORK O	RDER NON-C	ON	FORM	MANCE / UF	PDATE				-		
			, .									QA Closed:	·	Date:		
Work Orde	<del>ė</del> .				DIS	POSITION		AGAINST DEPARTMENT/PROCESS								
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Cause	Date	Step	Qty		or Non-confor	mance	Chie	ef Eng	Des	cription		Date	Verificat	ion	QC Inspector	
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	- 6				<u> </u>	neral	AULI	CATE	GURY							
Landin	<b>Bending</b>			<u> </u>	Bend	ierai	Па	Grain				Ovalized			Pressure/Forced	
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ŀ	Cracks	or conce	illic to	<sup>0/3</sup>	Broken/Dam	aged	$\vdash$		ion Incomplete			Part Incorre			Weld	-
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ŀ					Countersink		$\vdash$	violitic Vislabe			.  -	Positioned V	Vrong			
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<u></u>	Ripples in	-		<u></u>	Drill Holes		-	Offset	<del>-</del>		L	]		L		_
ļ	Torque V		Extrusio	n	Drawing	•	—		Calibration							

Out of Sequence

Outside Dimensions

DQA:

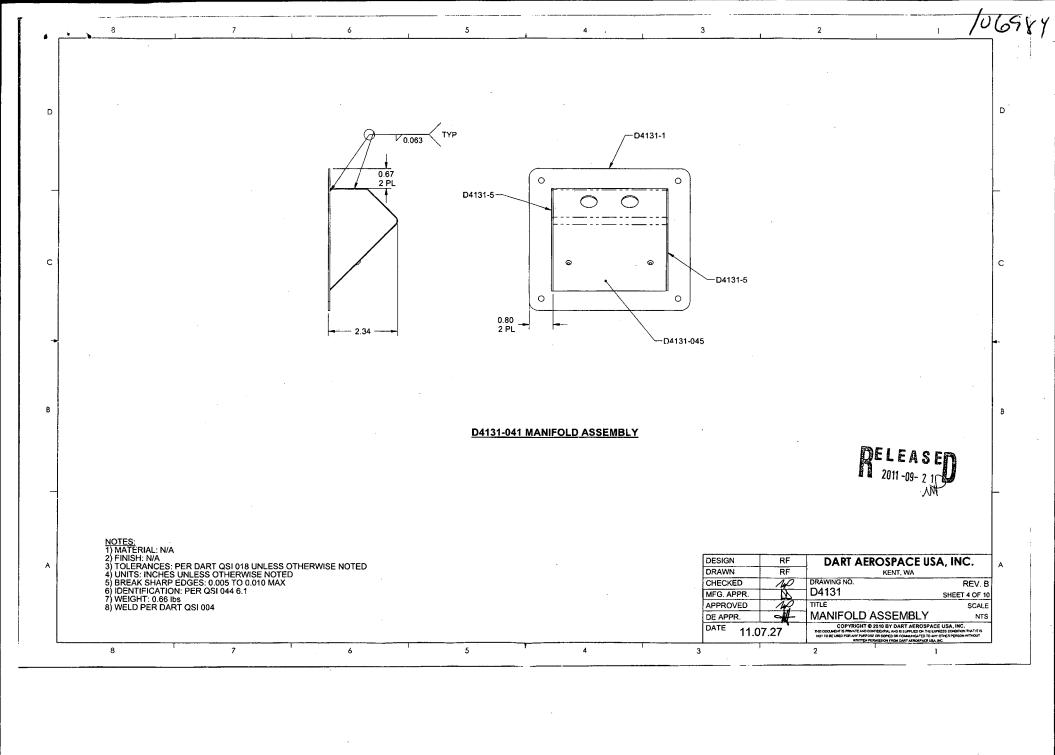
Date:

Turning Sequence

Wave/Twist in Tube

Finish

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		٠								DQA:	Date:	
NCR: Y	'es / No				WORK ORDER NON-C	COI	VFORM	MANCE / UP	DATE	QA Closed:	Data	
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Part N	lo				Scrap	1		Machining	Small Fab	Pro	d. Eng. Coor.	Quality
				<del></del>	Use-as-is		noforming	Finishing	-1	re/Packaging	Other	
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	Inspectio	n Strip in	Tube .		Cut Too Short		Misread	I	L	Power Loss/	Surge	Other
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Out of Sequence

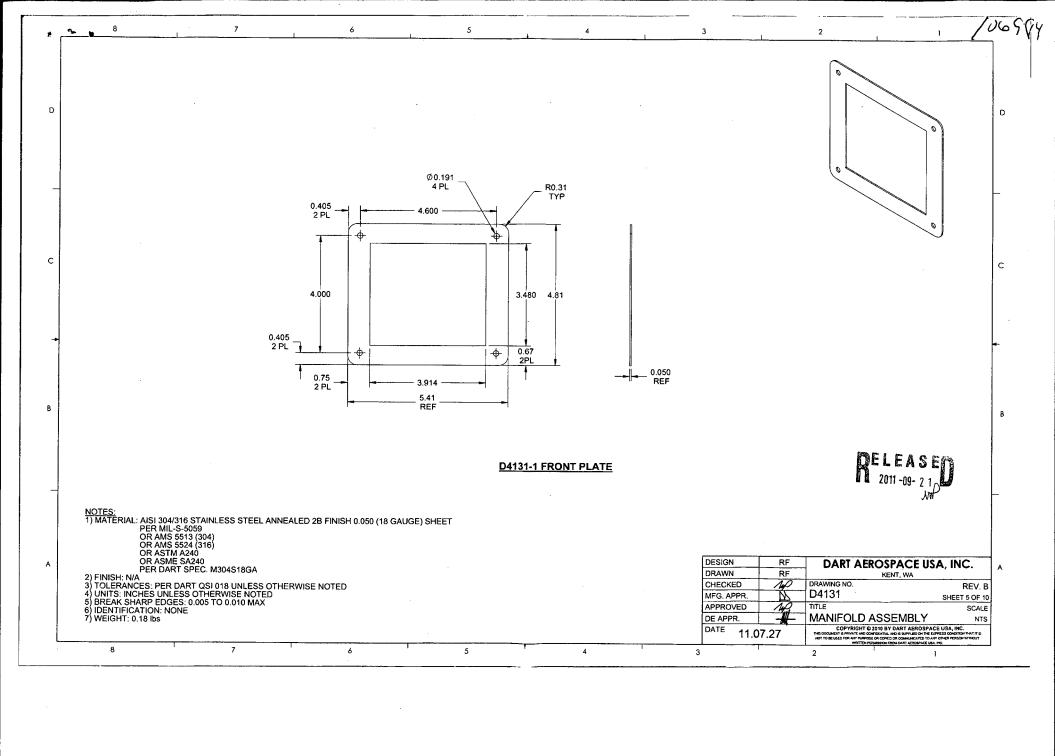
Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Finish

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G



											DQA:	_ Date:		
NCR: Y	es .	/ No				WORK ORDER NON-	100	NFORN	MANCE / UP	DATE	QA Closed:	Date:		
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¥5.	Ш	Centre No	ot Conce	ntric to	o/s	BOM/Route	<u> </u>	Hardwa			Over/Under	<del> </del>	Temperature/Cure	
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	$\vdash$	nspection		Tube		Cut Too Short	<u> </u>	Misread	I	<u> </u>	Power Loss/S	Surge	Other	
	F	Ripples in	Bend			Drill Holes	1	Offset						

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Torque Waves in Extrusion

Drawing

Finish

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